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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,344	06/28/2001	Ki Y. Nam	4711P006	6453

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EXAMINER	
D AGOSTA, STEPHEN M	

ART UNIT	PAPER NUMBER
2683	7

DATE MAILED: 05/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/894,344	NAM ET AL.	
	Examiner	Art Unit	
	Stephen M. D'Agosta	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-28 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-28 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 28 June 2001 is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 2, 6.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

Applicant's claim for domestic priority under 35 U.S.C. 119(e) is acknowledged.

Information Disclosure Statement

The information disclosure statements (IDS's) submitted on 10 Oct 2001 and 21 Oct 2002 are in compliance and accordingly, the information disclosure statements are being considered by the examiner.

Drawings

The drawings filed on 28 June 2001 are acceptable subject to correction of the informalities indicated on the attached "Notice of Draftsperson's Patent Drawing Review," PTO-948. In order to avoid abandonment of this application, correction is required in reply to the Office action. The correction will not be held in abeyance.

Preliminary Amendment

The preliminary amendment has been reviewed by the examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-2, 6-7, 11-12, 16-17, 19, 23-24 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over Soliman et al. US 6,081,229 and further in view of Friederich et al. US 6,393,149 (hereafter Soliman and Friederich).

As per **claim 1**, Soliman teaches a geo-location system/method (title) comprising:

A plurality of references having reference position data (C1, L24-36)

A mobile unit within a region covered by a reference, the mobile capable of determining geo-location of the mobile (C1, L45-65 teaches GPS-capable phone)

A locator to receive geo-location data of the mobile and to determine geo-location by comparing the data against the reference positional data of the reference covering said region (C2, L15 to C3, L10, specifically C2, L63 to C3, L2 teaches device that calculates position) **but is silent on** compressed data.

Friederich teaches compressing data in an RF/wireless system to reduce the amount/size of data transmitted (Abstract and C4, L29-49).

With further regard to claim 6, Soliman in view of Friederich teaches system/method limitations found in claim 1 and that each BTS reference will have its own identification code (figure 2 shows BTS-1 and BTS-2, #10, #11). The examiner also states that BTS-ID's are inherently known in the art in order to uniquely identify each BTS during operations.

With further regard to claim 11, Soliman in view of Friederich teaches a cellular network (abstract teaches CDMA) and system/method limitations found in claims 1

(and/or 6) **but is silent on** an application service provider (ASP). **Friederich** teaches a navagation application program (title and abstract) that would be resident either on a user device or provided by an ASP.

With further regard to claims 16-17, Soliman in view of Friederich teaches system/method limitations found in claim 1 (and/or 6 or 11) and that each BTS reference will have its own identification code (figure 2 shows BTS-1 and BTS-2, #10, #11). The examiner also states that BTS-ID's are inherently known in the art in order to uniquely identify each BTS during operations.

With further regard to claim 23, Soliman in view of Friederich teaches the system/method limitations of claim 1 (and/or claim 6, or 11 or 16) **but is silent on** a mobile asset. The examiner notes that Soliman teaches "determining the position of a wireless CDMA transmitter" which can be broadly interpreted as a transmitter that is attached/installed in/on virtually any asset that is desired to be delivered somewhere (eg. a person, package, cargo container, crate, etc.) since the transmitter is a self-contained transmitter/receiver. While Soliman's focus is a CDMA phone, one skilled can strip out the phone functionality so that it is just a CDMA transceiver which can be tracked (the examiner refers to, but does not cite Denekamp, who teaches tracking cargo via wireless communications similar to the applicant's invention).

It would have been obvious to one skilled in the art at the time of the invention to modify Soliman, such that data is compressed and an ASP is used, to provide means of reducing the amount of data transmitted via costly, low-bandwidth RF/wireless links if an application is hosted on a ASP network server.

As per **claims 2, 7, 12, 19 and 24**, Soliman teaches claim 1/6/11/16/23 wherein GPS is used (C1, L45-65).

As per **claim 28**, Soliman in view of Friederich teaches wherein the compressed geo-location data is transmitted through a cellular network (abstract teaches CDMA cellular system).

Claims 3, 8, 13, 20 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Soliman in view of Friederich as applied to claim 1/6 and further in view of Lichter et al. US 6,256,489 (hereafter Lichter).

As per **claims 3, 8, 13, 20 and 25**, Soliman in view of Friederich teaches claim 1/6/11/16/23 and compressed data **but is silent on** units of LAT/LONG.

Lichter teaches "...As a result, efforts have been made to provide enhanced 911 service for mobile communication devices. One such system uses a location detection device that is capable of locating the latitude and longitude of a mobile caller by triangulating on the 9-1-1 signal transmitted by the mobile device. A data link between the location detection device and the ALI data base allows the latitude and longitude to be transmitted from the location detection device to the ALI data base where it can be retrieved by the PSAP...". (C1, L66 to C2, L15, specifically C2, L11-15).

It would have been obvious to one skilled in the art at the time of the invention to modify Soliman in view of Friederich, such that LAT/LONG is used, to provide means of position determination via the commonly used standard of LAT/LONG.

Claims 4-5, 9-10, 14-15, 21-22 and 26-27 rejected under 35 U.S.C. 103(a) as being unpatentable over Soliman in view of Friederich and Lichter as applied to claims 3/8/13/16/25 and further in view of Fowler US 5,991,454 (hereafter Fowler).

As per **claims 4, 9, 14, 21 and 26** Soliman in view of Friederich and Lichter teaches claim 3/8/13/16/25 **but is silent on** wherein compressed geo-location data includes at least one least significant degree digit of latitude and at most two least significant degree digits of the longitude.

Fowler teaches that while some "...known data compression schemes treat all data in substantially the same manner, such as by removing some least significant bits from each of numerical term in the data, the present invention applies a criterion to determine the effect each numerical quantity will have on the result and accordingly

limits the number of bits transmitted in accordance with the magnitude of the effect on the result that the quantity will have. That is, the resolution of each transmitted quantity is dynamically determined such that, if the quantity will have a lesser effect on the result, the quantity is transmitted at lower resolution and, conversely, if the quantity has a greater effect on the result, the quantity is transmitted at a higher resolution..." (C8, L10-22) which reads on the claim.

It would have been obvious to one skilled in the art at the time of the invention to modify Soliman in view of Friederich and Lichter, such that certain significant digits are used/unused, to provide accuracy and data compression as required by the user in various situations.

As per **claims 5, 10, 15, 22 and 27** Soliman in view of Friederich and Lichter teaches claims 4/9/14/21/26 **but is silent on** wherein the locator determines the most significant degree digit of the LAT and at least the most significant degree digit of the LONG.

Since Fowler teaches "...removing some least significant bits from each of numerical term in the data.....That is, the resolution of each transmitted quantity is dynamically determined such that, if the quantity will have a lesser effect on the result, the quantity is transmitted at lower resolution and, conversely, if the quantity has a greater effect on the result, the quantity is transmitted at a higher resolution..." (C8, L10-22), this inherently requires the system to distinguish between Most and Least significant bits and use an algorithm to dynamically remove/add them as deemed necessary (eg. reads on determining most/least significant degree digit of LAT/LONG).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Soliman in view of Friederich and Lichter, such that the locator determines the most significant degree digit of the LAT and at least the most significant degree digit of the LONG, to provide the necessary amount of accuracy requested by the user (eg. may only need to know position at "state-level, "city-level" and/or "street-level". Each would inherently require less or more data to be transmitted based on the granularity of the request).

Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Soliman and Friederich as applied to claim 16 and further in view of Adamany et al. US 6,615,041 (hereafter Adamany).

As per **claim 18**, Soliman teaches claim 16 **but is silent on** use of point codes for HLR/VLR/MSC.

Adamany teaches use of point codes for HLR/VLR/MSC ["....To facilitate the exchange of messages and responses, the international gateway 10 may store information such as attributes with respect to mobile switching centers (MSCs) which are involved in transactions related to a wireless unit. These attributes may include: an MSC identification; a location; a point code; a subsystem number (SSN); an HLR identification (null if co-located with the MSC); an HLR point code; an HLR SSN; a VLR identification (null if co-located with the MSC); a VLR point code; a VLR subsystem number (SSN); an authentication center (AC) identification; an AC point code; and/or an AC SSN. This information may be stored in the database 80 or in some other memory structure. An exemplary embodiment of the international gateway 80 stores this information in a functional entity messaging relationship table..."] (C15, L20-36).

It would have been obvious to one skilled in the art at the time of the invention to modify Soliman, such that point codes are used, to provide means for identifying and using HLR/VLR/MSC data quickly and efficiently.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

1. Denekamp et al. US 4,750,197
2. Schuchman et al. US 6,111,538.
3 Tekinay US 6,414,634.
4. Zadeh et al. US 6,266,533
5. Parl et al. US 5,883,598.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist on 703-306-0377.

Stephen D'Agosta